

North Valley Wastewater Treatment Plant Update 2

July 16, 2015
Douglas County, NV BOCC Workshop

Agenda

1. Why are we here?
2. NV WWTP review
 - A. Existing deficiencies
 - B. Capacity analysis
 - C. Flow projections
3. Alternatives
 - A. Short-term (<20-years)
 - B. Long-term (20+years)
4. Implementation schedule

EXHIBIT (for identification only)
HENRY STANTON
Filed _____
By _____
Deputy _____

Why Are We Here?

1. Discharge permit requirement(s)

- B.TF.8 "The Permittee shall notify the Administrator... after the 30-day average daily influent rate first equals or exceed 85% of the design treatment capacity... The letter shall include:"
- B.TF.8.4 "A status report on the treatment works which will outline... modifications to the treatment works which are needed to attain the permitted flow rate..."
- B.TF.8.5 "The Permittee's schedule of compliance to provide additional treatment capacity before the 30-day average daily influent flow rate equals the present design treatment capacity of the Permittee's facility."

2. Douglas County is "Business Friendly" but are we "Business Ready"?

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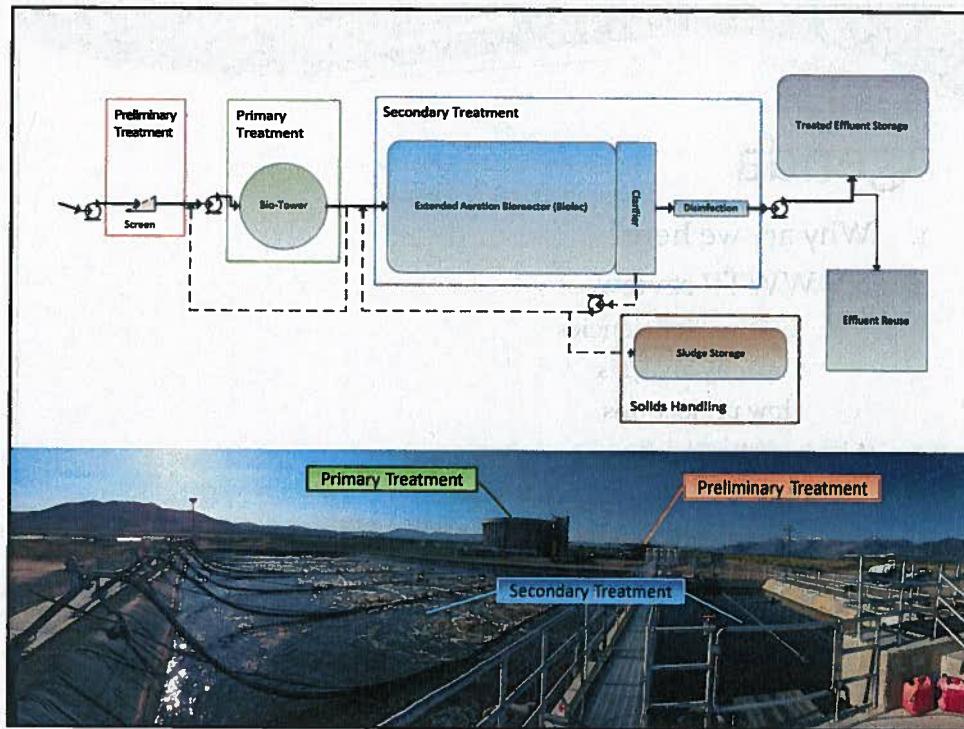
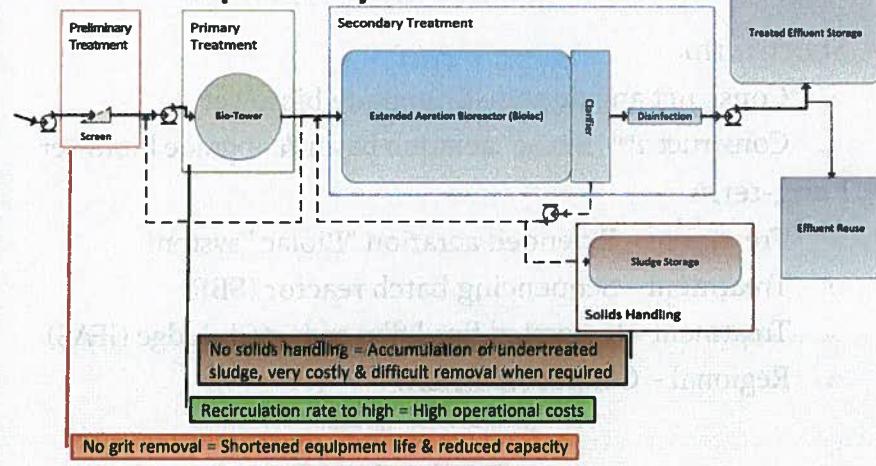


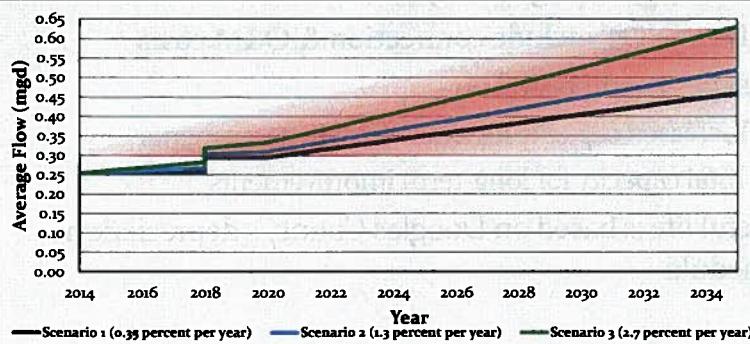
EXHIBIT (101) DISCHARGE PERMITTING
Exhibit 101
B7
DEFINITION

Non-Capacity Deficiencies



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Parameter	Unit	2015 Conditions	Plant Capacity	2035 Conditions
Influent flow (average day)	MGD	0.25	0.30	0.63
Influent BOD (average day)	lb/day	705	831	1,750
Influent TSS (average day)	lb/day	877	1,037	2,180
Influent NH ₃ (average day)	lb/day	93	155	230



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Improvement Alternatives

- Short-term

1. Construct anoxic zone & upgrade biotower
2. Construct 2nd "Biolac" aeration basin & upgrade biotower

- Long-term

1. Treatment - Extended aeration "Biolac" system
2. Treatment - Sequencing batch reactor (SBR)
3. Treatment - Integrated fixed film activated sludge (IFAS)
4. Regional - Connect to MGSD

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Alternative Evaluation Notes

- Capital costs include:

- Engineering design (10%) & construction management (14%)
- Contingency (15% to 25%)
- Does NOT include connection & O&M costs

- Cost per gallon based on

- Increased capacity for short-term improvements
- Total capacity for long-term improvements

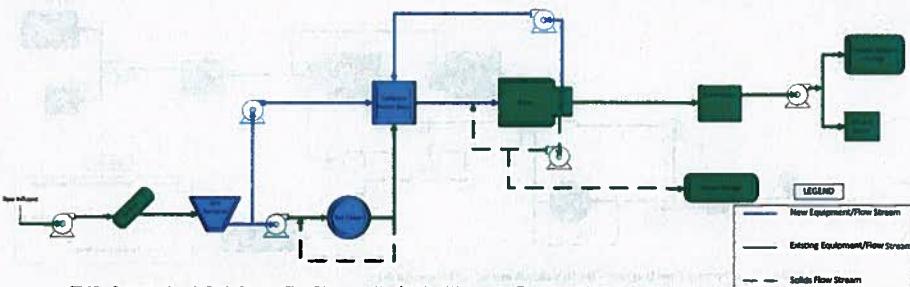
- Useful life is based on Douglas County's depreciation schedule

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Note on Cost Estimates

- Capital cost estimates are “planning” level estimates
 - AACE Class 4 estimate = -30% to +50%
 - Costs are refined as design progresses
 - AACE Class 2 estimate (at bid) = -15% to +20%.
- Construction costs are not static - getting reports of fluctuations in the industrial construction market
- Funding requirements can significantly effect costs

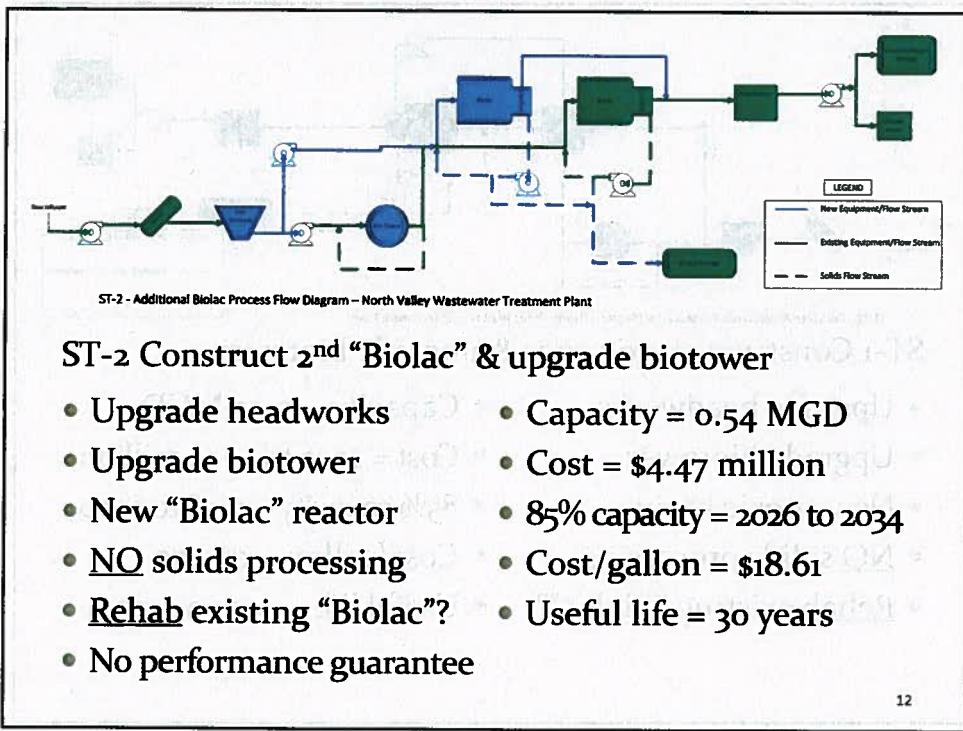
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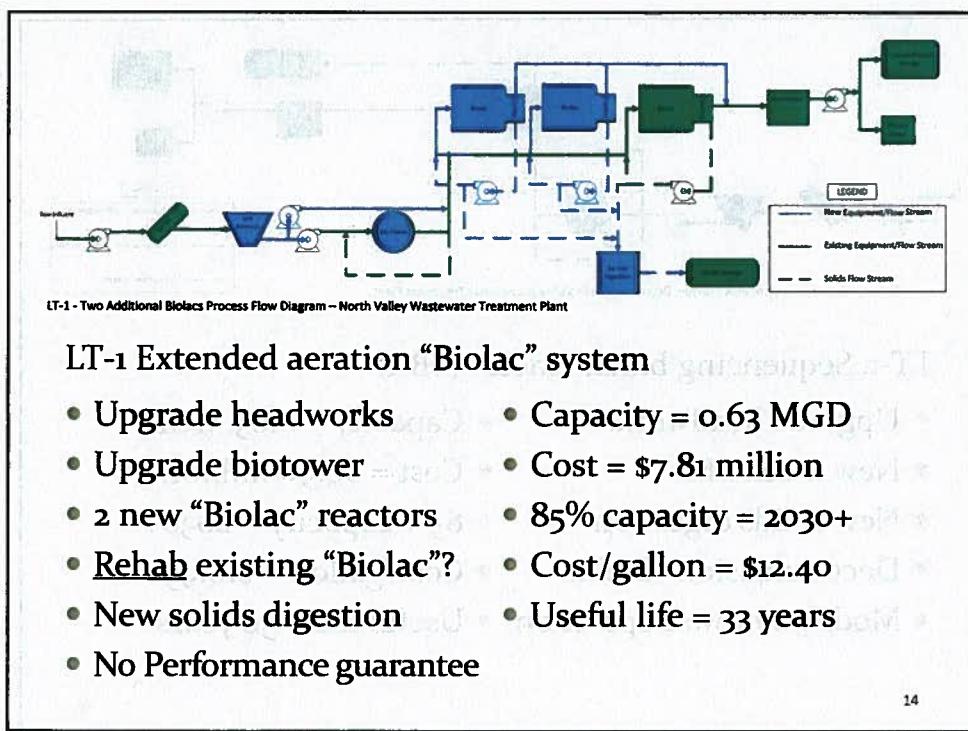


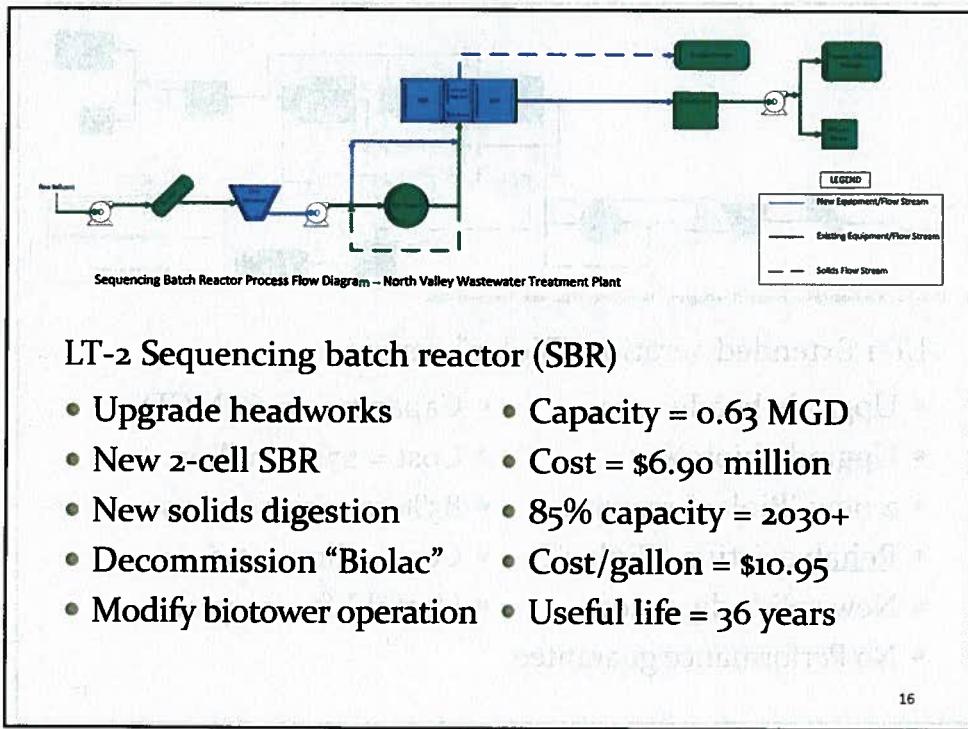
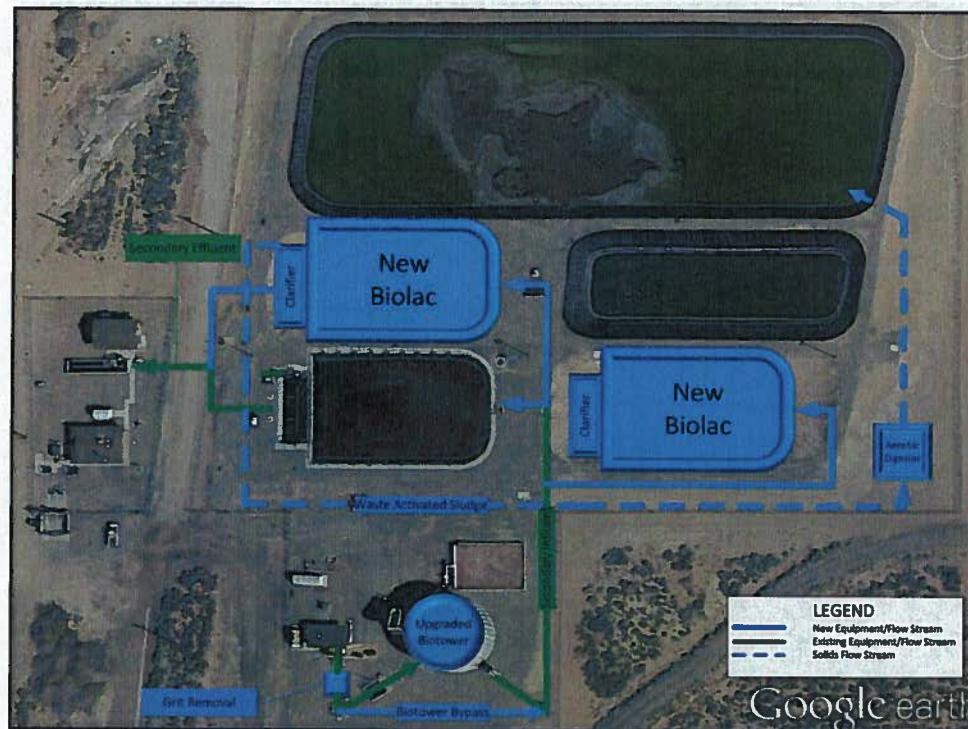
ST-1 Construct anoxic zone & upgrade biotower

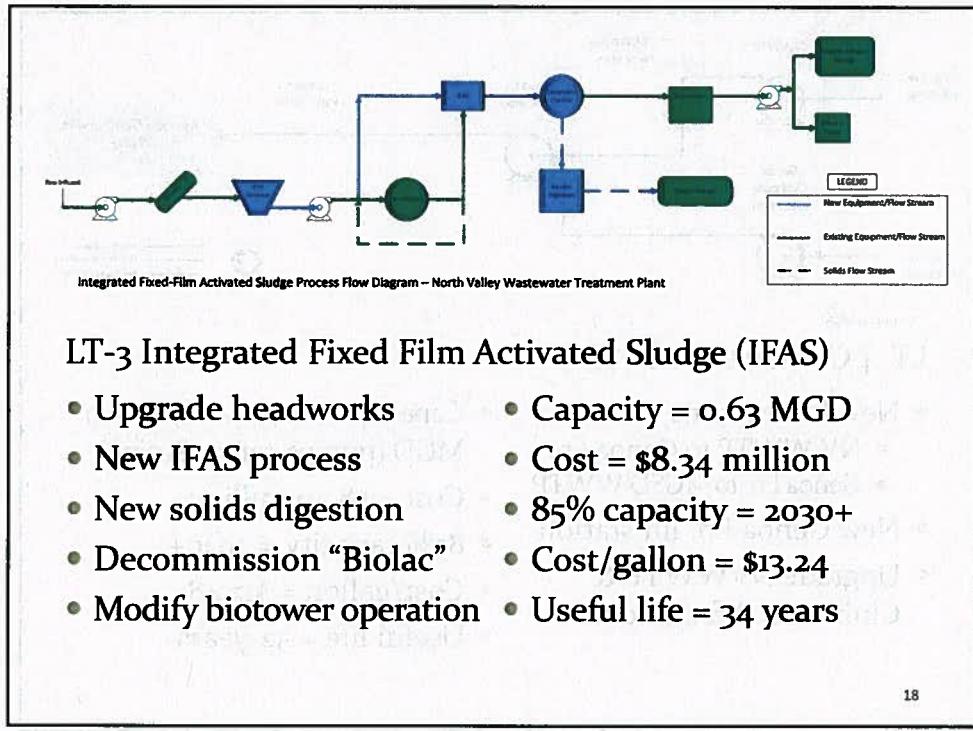
- Upgrade headworks
- Upgrade biotower
- New anoxic basin
- NO solids processing
- Rehab existing “Biolac”?
- Capacity = 0.35 MGD
- Cost = \$3.13 to \$4.14 million
- 85% capacity = 2018 to 2020
- Cost/gallon = \$62.50+
- Useful life = 30 to 34 years

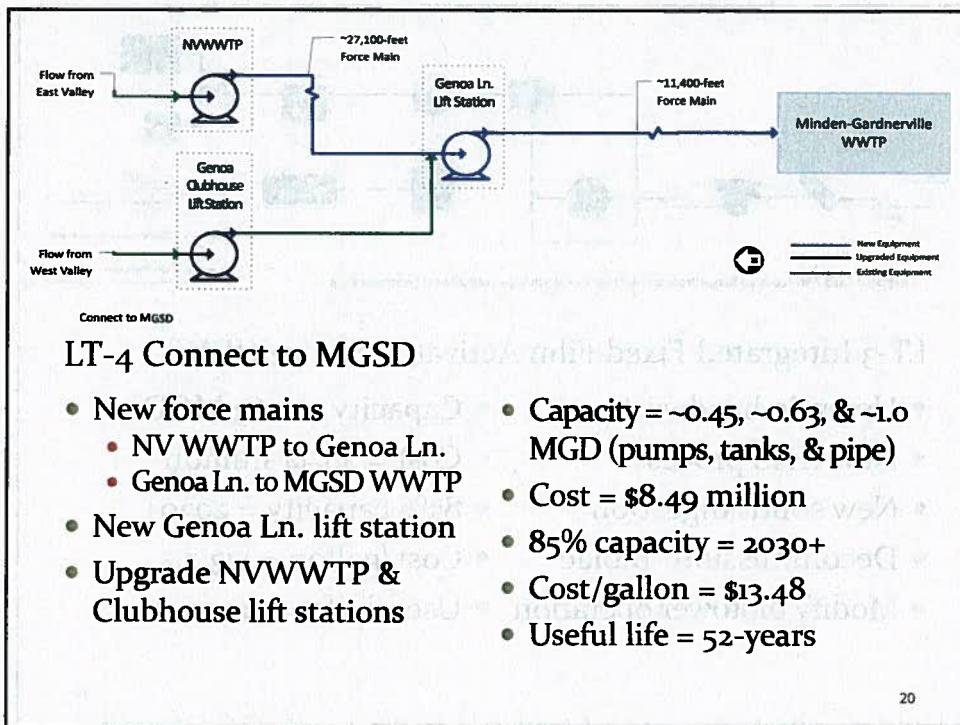
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LT-4 Connect to MGSD Notes

Based on meeting with MGSD Board on July 7

- MGSD is not interested in operating the DC collection system
- May be interested in contract treatment
 - DC retains operation of collection system
 - DC delivers wastewater to MGSD
- Connection/capacity charges will be assessed
 - Selling capacity to GRGID for \$3,750 per EDU
 - Connection/capacity charges could exceed \$10 million
- User rates = DC costs* + MGSD treatment cost

*DC costs include O&M for collection system, debt (new & existing), system reinvestment, reserves, MGSD connection fees, etc.

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Alternative Summary

Alternative	Capacity, MGD	Capital Cost (million)	85% Capacity	Cost / gallon	Useful Life (years)
ST-1 Anoxic	0.35	\$3.13-\$4.14	2018 - 2020	\$62.50+	30 to 34
ST-2 Biolac	0.54	\$4.47	2026 - 2034	\$18.61	30
LT-1 Biolac	0.63	\$7.81	2030+	\$12.40	33
LT-2 SBR	0.63	\$6.90	2030+	\$10.95	36
LT-3 IFAS	0.63	\$8.34	2030+	\$13.24	34
LT-4 MGSD	0.63	\$8.49	2030+	\$13.48	52

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Implementation Schedule

- August 6 – BOCC Workshop presentation
 - Final alternative analysis
 - Funding option
- September 3 – BOCC Meeting
 - Present alternative recommendation to BOCC for approval
 - Direct staff to:
 - Select design consultant
 - Prepare funding plan/alternatives
- January 2016 – Select engineering design consultant

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Implementation Schedule

- March 2016 – BOCC Meeting
 - Approve engineering contract
- March 2016 – Begin design/implement funding plan
- March 2017 – Permitting
- May 2017 – Bidding
- August 2017 – BOCC Meeting
 - Approve construction contract
- October 2017 – Begin construction
- October 2018 – Plant startup
- December 2018 – Final completion

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MAINTAINING AND FUNDING LOCAL COUNTY ROADS

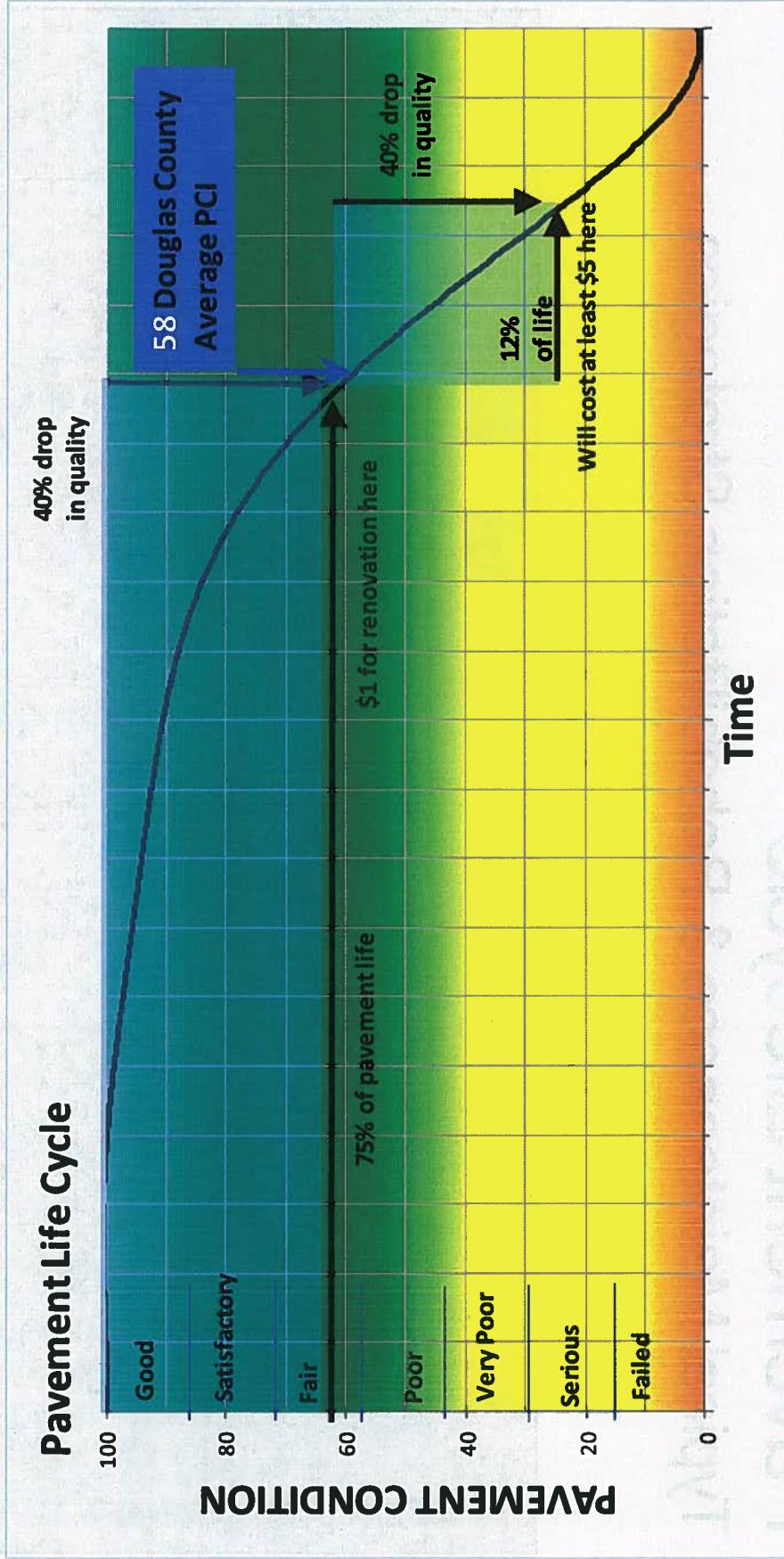
July 16, 2015

EXHIBIT (for identification only)
Heath A. T. C.
Filed _____
By _____ Deputy _____

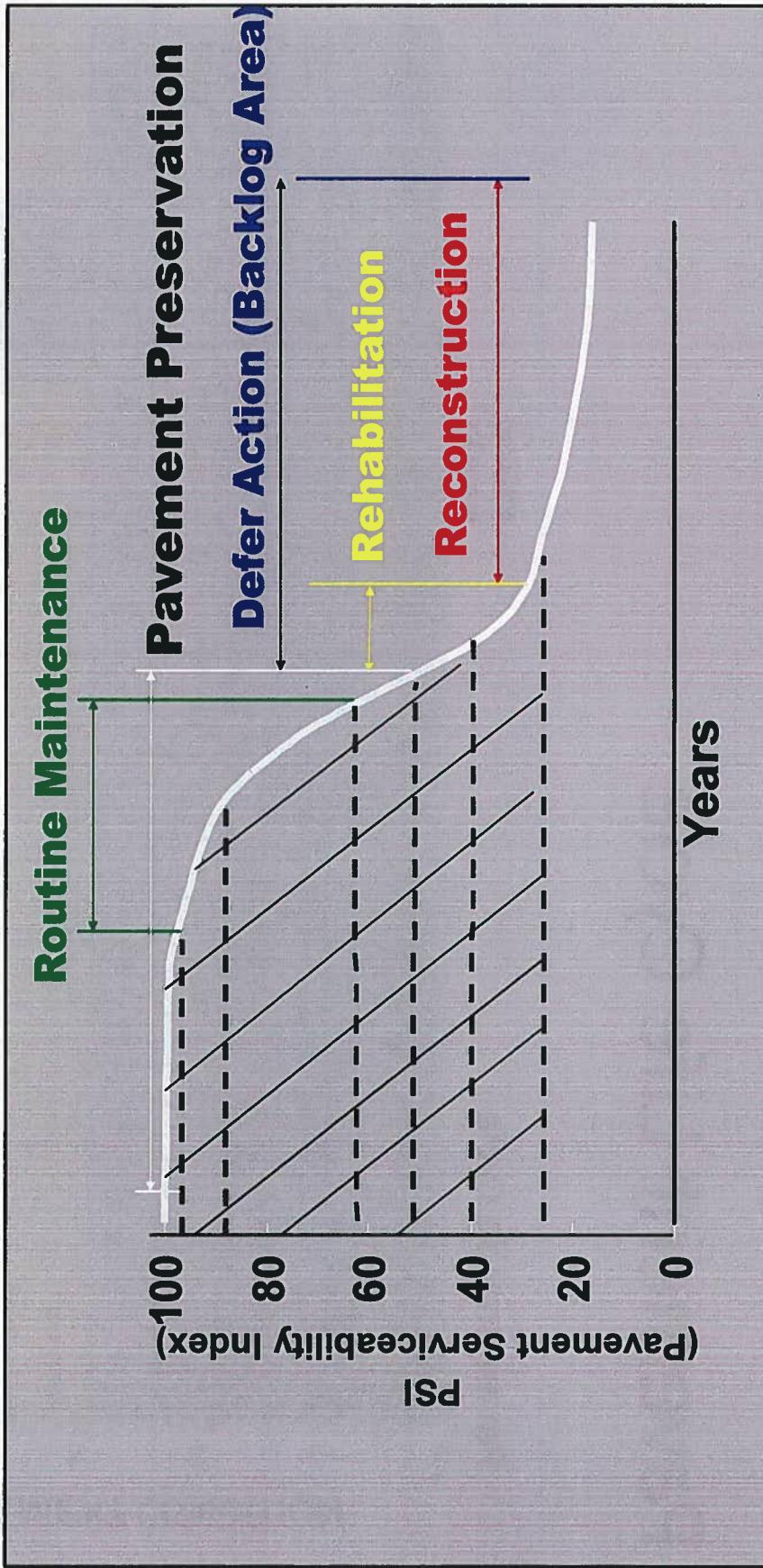
Questions to Answer

- Backlogged Roads
- What are they?
- How large is the backlog?
- Where are we on funding needs?

Pavement Life Cycle



Pavement Lifecycle Typical Maintenance & Rehabilitation Strategies

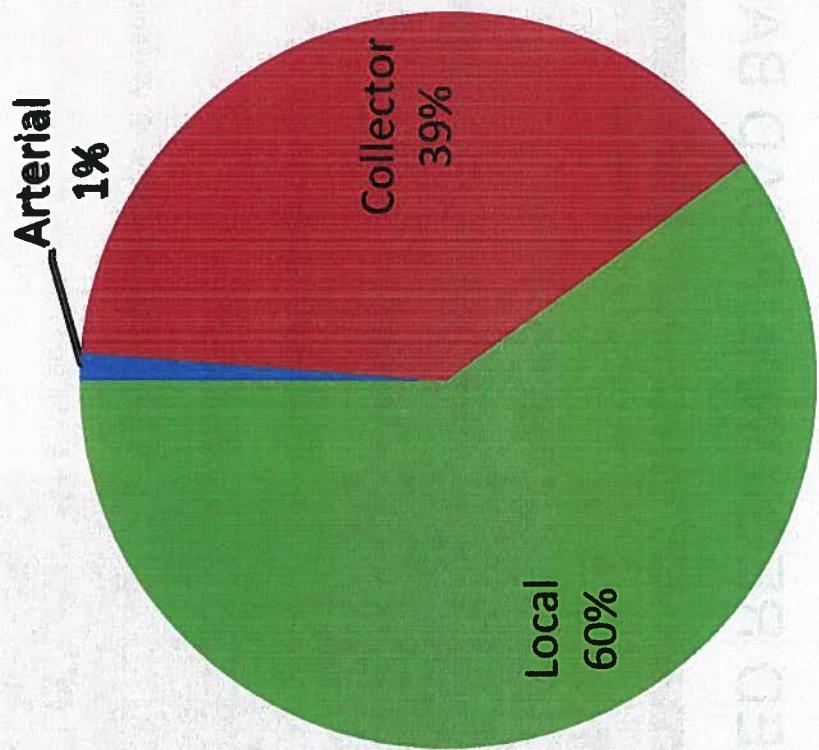


UNFUNDDED REGIONAL ROAD BACK LOG

Waterloo Lane (SR 88 to SR 756)	Full Reconstruction needed	\$2,500,000
Jacks Valley Road	Roadbed Modification	\$3,000,000
Buckeye Road	Roadbed Modification w/ 2' Widening	\$850,000
Mottsville Lane *	4" Mill and Fill	\$1,300,000
Dresslerville Lane	Roadbed Modification	\$700,000
Centerville Lane *	2" Mill and Fill	\$600,000
Pinenut Road / Dump Road	Roadbed Modification w/ 2' Widening	\$2,000,000
Fredericksburg Road	4" Mill and Fill	\$300,000
Airport Road	Roadbed Modification	\$400,000
	Total	\$11,650,000

* DOES NOT INCLUDE BACK LOG OF BRIDGE IMPROVEMENTS OR WIDENING

Distribution of Pavement Area by Functional Classification



UNFUNDDED LOCAL ROAD BACK LOG

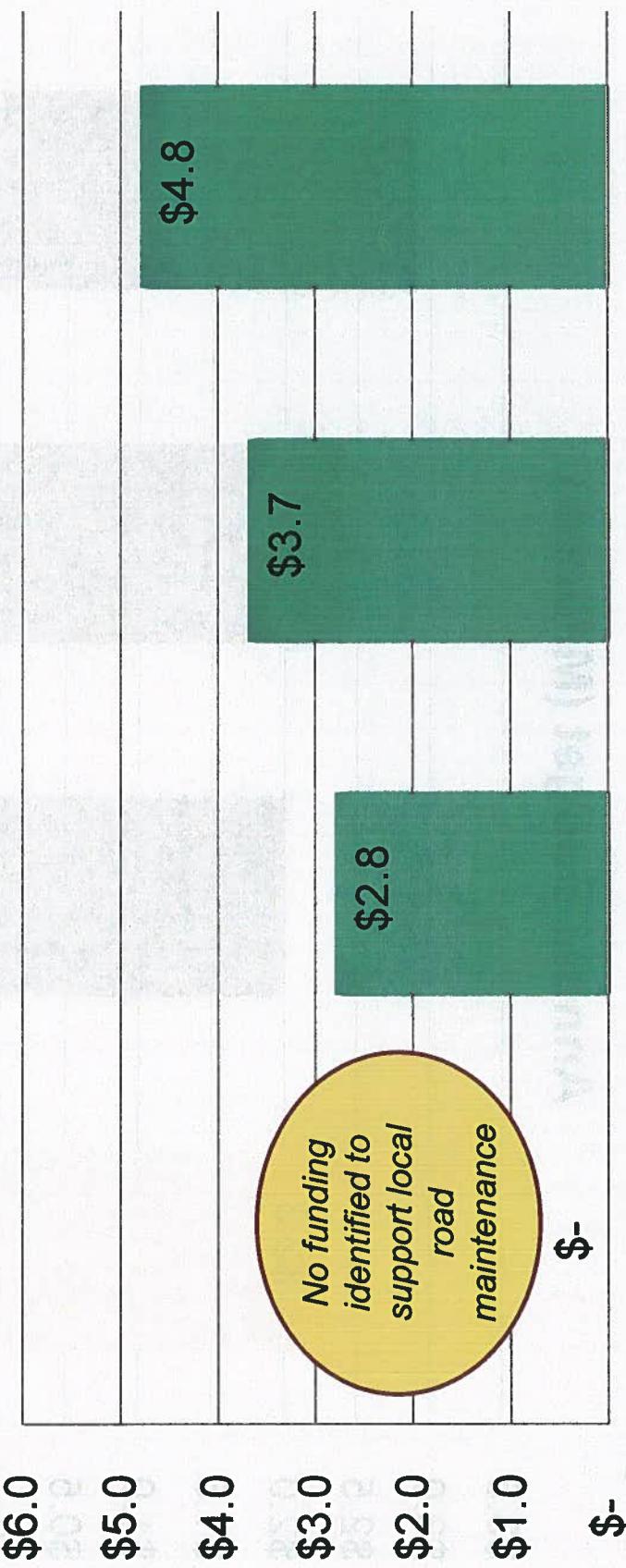
154 Local Roads w/ PCI < 55	Full Reconstruction or pavement replacement needed for improvement	\$40,000,000
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Agency	Miles Maintained			Approximate Annual Preventive Maintenance Funding (not including routine maintenance)	Total Per Mile
	Paved/ Chip Seal	Grindings	Gravel/Dirt		
Douglas County	177	43	17	231	\$1,000,000 to \$1,300,000
					\$5,627

WHERE ARE WE ON FUNDING NEEDS?

Road Maintenance Funding Needs – Local Roads

Annual Budget (Millions)

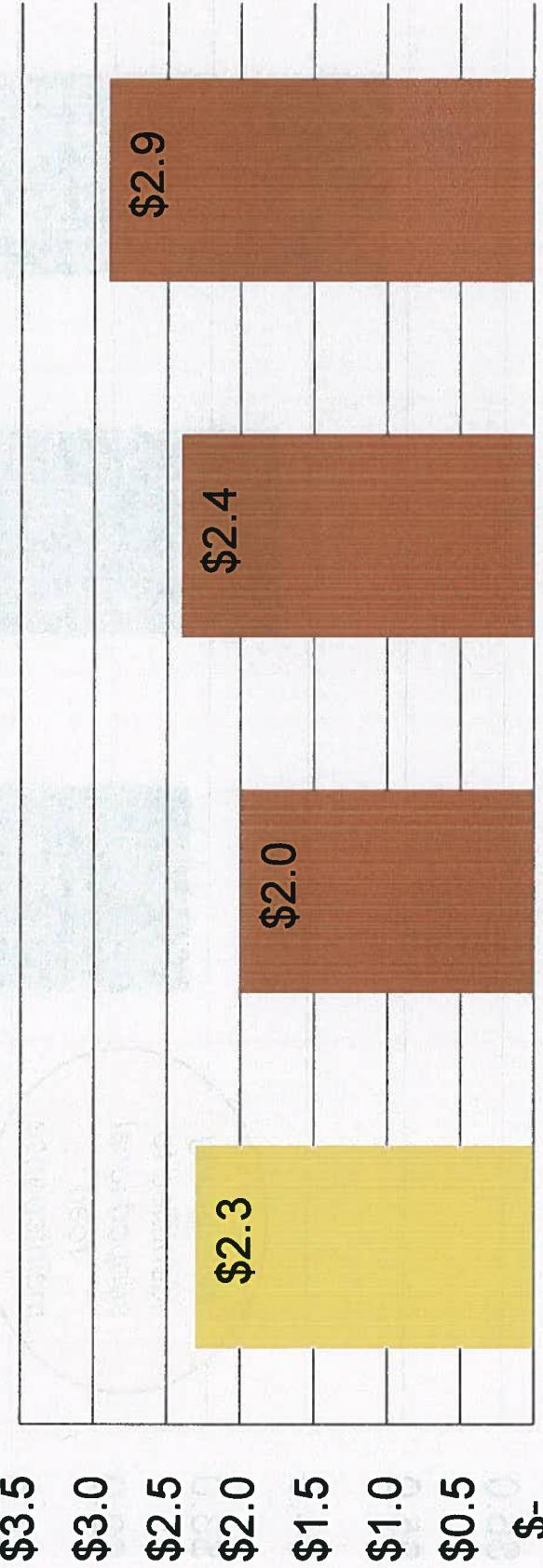


Current Funding Level
Maintain Current PCI Level
Improve Road Condition to PCI Backlog including Policy Level (70)
Eliminate reconstructing some roads

Based on 2010 Model, costs may vary as a function of time

Road Maintenance Funding Needs – Regional Collector Roads

Annual Budget (Millions)



Current Funding Supports Maintain Current PCI Level Improve Road Condition to PCI Backlog including Policy Level (70) Eliminate Regional Collector Roads
Plan in place to fund regional collector roads

Based on 2010 Model, costs may vary as a function of time

Current Road Funding

- Gasoline tax (6.35 cents/gallon) and the 1% room tax collected in the Carson Valley.
- Lake Tahoe beginning in FY 11/12 the road maintenance costs at Lake Tahoe have been paid from the 6.35-cent gasoline sales tax and the 1% room tax collected in the Carson Valley.
- The Board of Commissioners approved a transfer of \$191,000 from the General Fund for FY 12/13, and increased the (annual and ongoing) transfer to \$214,343 beginning in FY 13/14.
- The \$3,000,000 Highway Bond, Debt service on the bond is paid from the 4-cent Gas Tax. The debt payments (approximately \$224,000/year) are scheduled to end in FY 2017-2018.
- Debt service for the bond for the parking garage at Stateline is paid from the 1% TOT collected at Lake Tahoe. Debt service on the bond (approximately \$289,000/year) is scheduled to end in FY 2019-2020.

- The Board of Commissioners approved the \$500/unit residential construction tax with Ordinance No. 97-769 following approval by the voters in 1996. The ordinance allows the money collected to be used for construction and maintenance of street and highway projects. Historically this money has been used for chip seals, slurry seals and overlays.
- The Board of Commissioners approved the \$0.50/SF commercial construction tax with Ordinance No. 2004-1063. The ordinance allows the money collected to be used for construction and maintenance of street and highway projects. Historically this money has been used for chip seals, slurry seals and overlays.
- **Estimated Revenues is about \$4.95 million per year.**
 - \$640,000 to General Road Maintenance
 - \$1,757,000 to Cost Allocation, Debt Services, Staff, Services & Supplies
 - Remainder to Transit, Engineering, Reconstruction, and Road Seal

QUESTIONS